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Integrating Corporate Sustainability and Organizational Strategy Within the Undergraduate Business Curriculum

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Corporate sustainability (CS) requires organizations to shift focus from short-term financial goals to further consider the long-term social, environmental, and economic implications of their operations. Despite a lack of regulations in the United States requiring companies to disclose social and environmental measures, more than 80% of U.S. corporations voluntarily release corporate responsibility reports. The increased focus of CS in practice has impacted many business curricula to adapt CS-related courses (such as business ethics); however, we present results that indicate that such means may have limited influence on students' views concerning the legitimacy of social and environmental issues in regard to corporate decision making. More consideration is needed to determine how CS-related topics can be effectively integrated within business curriculums. We propose incorporating CS within the Organizational Strategy capstone course and assess its effectiveness via survey analysis. Suggestions for course design are provided. *Organization Management Journal*, 10: 255–266, 2013. doi: 10.1080/15416518.2013.859059

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INTRODUCTION

The concept of corporate sustainability (CS) has emerged due to the market realities of increasing public pressure for more socially and environmentally conscious business practices (Porter & Kramer, 2006; Prakash, 2000). The basic principle that guides sustainability is the interdependence of economic activity, society, and nature (Stead & Stead, 2004). CS incorporates practices that not only meet the needs of stakeholders today, but also protect human and natural resources for future generations. It requires organizations to strategically shift their focus from measurement of short-term, financial-performance goals to further consider the long-term economic, social, and environmental implications of their operations, also known as the "triple bottom line."

A new strategic paradigm is emerging for juggling the competing demands of stakeholders. Books (Anderson, 2011; Esty & Winston, 2009; Freeman, 2010; Hawken, 2010; Hawken, Lovins, & Lovins, 2008; Stout, 2012), scholarly literature (Hollender, 2004; Porter & Kramer, 2006; Zadek, 2004), and conferences (those of the Association to Advance Collegiate Schools of Business [AACSB], 2008–2013) are appearing that demonstrate the importance of recognizing a stakeholder (rather than simply a stockholder) perspective when developing corporate strategies. A corporate stakeholder is any group or entity that has an effect on corporate behavior and, in turn, is affected by it. For example, customers, employees, suppliers, government bodies, the local community, society-at-large, and the physical environment are often counted as stakeholders to the focal firm. Strategies that fail to account for such demands will not be robust enough to cope with this new, turbulent environment. Specifically, corporations will no longer be able to externalize the myriad of social and environmental costs associated with their products, as projections indicate that over the next 20 years there will be increasing pressure for prices to reflect the full costs of environmental impact (KPMG, 2012). This paradigm shift recognizes that corporations do not exist in a vacuum. As the dominant institutions of today (Welker, Partridge, & Hardin, 2011), corporations significantly affect and are affected by society, the environment, and their stakeholders, having the potential to do both great good and great harm.

Despite the lack of regulations in the United States requiring companies to disclose social and environmental measures, more companies are issuing CS reports for a variety of reasons, including managing the perceptions of stakeholders, conveying organizational values to the public, and establishing legitimacy (Cecil, 2010). It is now estimated that 83% of U.S.

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corporations release corporate responsibility reports, up from only 35% in 2005 (KPMG, 2005, 2011). The increased focus of CS in practice has expectantly spilled over into business curriculums.

In 2010, Moon and Orlitsky found that 67% of undergraduate business programs included in their North American study required a course in corporate social responsibility, business ethics, or sustainability, and 83% made optional coursework in this area available for students—although their sample consisted of only 22 programs. In this work we present results that indicate that such curriculum changes may have limited influence on students' views concerning the legitimacy of social and environmental issues in regard to corporate decision making.

Our results are in line with those of previous studies that reported mixed findings regarding the effectiveness of business ethics education (Arlow, 1991; Seider, Gillmor, & Rabinowicz, 2011; Waples, Antes, Murphy, Connelly, & Mumford, 2009). In light of these results, along with previous findings that show that business majors have lower overall concern for environmental issues relative to other majors (Benton, 1994a; Hodgkinson & Innes, 2001) and score lower on tests of moral development relative to the American public at large (Schmidt, Adams, & Foster, 2009), more consideration is needed to determine how CS-related topics can be effectively integrated within the undergraduate business curriculum. The numerous corporate scandals that have stained the opening decade of the 21st century (Seider et al., 2011) only reinforce this assertion.

We propose incorporating CS within the Organizational Strategy course due to the synergistic nature of these concepts in that the pursuit of sustainability has many long-term strategic ramifications. CS requires a comprehensive understanding of the interdependent relationships between the organization, society, and the natural environment. The familiar components of the strategic planning process have to be reconceptualized, as a CS-focused strategy is based on a fundamentally different set of assumptions about the relationship between corporations and their stakeholders. Exposing undergraduates to differences in such assumptions facilitates a deeper understanding of the importance of social and environmental issues in developing corporate strategy, where the traditional strategy courses falls short of giving due attention to the importance of noneconomic issues.

The effectiveness of an integrated CS-strategy capstone course is then assessed via survey analysis, where we explore the degree to which integrating CS topics within the senior capstone strategy course influences students' views toward the legitimacy of social and environmental issues in regard to corporate decision making. Findings indicate that integrating CS topics within the capstone strategy course may be an effective means for influencing students' views toward CS. Suggestions for designing a CS-focused strategy course are also provided.

CORPORATE SUSTAINABILITY

CS Definition and Related Terms/Concepts

There have been several terms introduced in the literature that are closely related to the concept of corporate sustainability (CS), including corporate sustainable development (CSD), corporate social responsibility (CSR), and corporate social performance (CSP). Montiel (2008) further compares and contrasts these terms and their uses in the literature, and we refer readers to this work for a more detailed discussion. General conclusions are that CS is by and large synonymous with CSD, and CSP has replaced the term CSR in recent management literature. Further, measures of CSP and CSR are converging, and corporations use CS and CSR interchangeably in practice. Montiel further encourages researchers to determine whether CSR and CS are equivalent constructs. In this work we adopt a broad view of CS and assume that it includes CSD, CSR, and CSP.

The working definition of CS we adopt was introduced in 1987 by the World Commission on Economic Development, where it was stated that sustainable development "meets the needs of the present without compromising the ability for future generations to meet their own needs." Bansal (2005) expounded upon this definition by describing the three principles of corporate sustainable development: environmental integrity through corporate environmental management, social equity through corporate social responsibility, and economic prosperity through value creation. Ultimately, most definitions of CS contain the underlying assertion that a corporation's responsibility is not only to its shareholders, but also to its stakeholders and the environment. However, there is significant debate over what these "responsibilities" truly mean—outside of being beyond legal and ethical minimums. Specifying the extent of responsibility raises questions about the role of the corporation.

CS and the Role of the Corporation

The fundamental role of the corporation in society has been subject to a long-standing debate, which seems to have propagated as CS gains popularity. The central theme of this debate concerns the extent to which corporations are responsible for protecting the environment and the welfare of their stakeholders.

Cases in which CS initiatives directly align with increased profits have not been widely disputed. Such instances have been referred to as the business case for CSR (Carroll & Shabana, 2010). However, in these cases the relevance of CS has been disputed. In his recent article, Karnani (2010) states that "in cases where private profits and public interests are aligned, the idea of corporate social responsibility is irrelevant: companies that simply do everything they can to boost profits will end up increasing social welfare." Friedman (1970) holds a similar view, stating that labeling actions that are justifiable based on financial grounds as social responsibility is merely a "cloak."

On the other hand, Berger, Cunningham, and Drumwright (2007) assert that focusing only on cases for supporting CS initiatives that directly align with increased profits represents a narrow view that does not appreciate the complex interdependence between business, society, and the natural environment. They discuss an alternative broad view of the business case for CS, which has also been termed the syncretic case in that it appreciates this complex interdependence, recognizing both direct and indirect relationships between CS and financial performance. The broad view enables firms to identify opportunities that yield significant value, which would have otherwise been overlooked by the narrow view as such opportunities may be risky, may not be readily apparent, may require long-term initiatives, or may entail significant organizational change.

Note that both the narrow and broad business cases for CS are still in the best financial interests of the firm. Karnani (2010) acknowledges that not enough of these opportunities are seized by managers today: "Unfortunately not all companies take advantage of these opportunities, and in those cases both social welfare and profits suffer." However, he further emphasizes the importance of cases where environmental/social interests are at odds with financial incentives. In most cases, doing what's best for society means sacrificing profits. "This is true for most of society's pervasive and persistent problems," Karnani states; "If it weren't, those problems would have been solved long ago by companies seeking to maximize their profits." The question in this case is, to what degree are corporations responsible for exceeding legal and ethical minimums? Both Friedman and Karnani agree that government regulation is the most effective means for addressing environmental and social problems. Karnani even goes so far as to state that focusing on CS in such cases is dangerous in that it "will delay or discourage more-effective measures to enhance social welfare in cases where profits and the public good are at odds. As society looks to companies to address these problems, the real solutions may be ignored."

Relationship Between CS and Financial Performance

A meta-analysis conducted by Orlitzky, Schmidt, and Rynes (2003, p. 403) concluded that "corporate virtue in the form of social responsibility and, to a lesser extent, environmental responsibility is likely to pay off." However, research to date on characterizing the relationship between CS and financial performance is conflicting. For example, Nelling and Webb (2009) found evidence that financial performance leads to improved social performance—rather than vice versa. Van der Laan, Van Ees, and Van Witteloostuijin (2008) found that positive CSP behaviors had little financial impact, although negative CSP actions did have the potential to impair financial performance. Makni, Francoeur, and Bellavance (2009) found evidence that CSP hurt financial performance for their sample of firms. Cardebat and Sirven (2010) found a negative correlation between their CSR index and financial return, but a limitation of their study was a time frame of only 8 years. They recognize that the return on most CS initiatives is long term and therefore call for continued research, especially analyses investigating longer time frames.

On the other hand, the most recent study in this area, which spanned a time frame of 18 years, found a positive relationship between CS and financial performance. In this study, Eccles, Ioannou, and Serafeim (2012) use propensity score matching to compare the financial performance of 90 firms that adopted significant environmental and social policies in the early 1990s with 90 comparable firms that adopted almost none of these policies. Results show that high-sustainability firms significantly outperform their counterparts over the long term. The outperformance is stronger in sectors where the customers are individual consumers, where companies compete on the basis of brands and reputation, and in sectors where companies' products significantly depend upon extracting large amounts of natural resources. They summarize their findings as follows:

> Overall, we find evidence that firms in the high-sustainability group are able to significantly outperform their counterparts in the low-sustainability group. This finding suggests that companies can adopt environmentally and socially responsible policies without sacrificing shareholder wealth. In fact, the opposite appears to be true: sustainable firms generate significantly higher profits and stock returns, suggesting that developing a corporate culture of sustainability may be a source of competitive advantage for a company in the long-run. A more engaged workforce, a secure license to operate, a more loyal and satisfied customer base, better relationships with stakeholders, greater transparency, a more collaborative community, and a better ability to innovate may all be contributing factors to this potentially persistent superior performance, even in the very long term. (p. 27)

PREVIOUS WORK

Upon review of previous work regarding corporate sustainability and business education, much of the debate encircles whether CS would be more effectively situated as a stand-alone course or incorporated into other areas throughout the curriculum (Christensen, Peirce, Hartman, Hoffman, & Carrier, 2007; Stubbs & Cocklin, 2008). A consensus appears to be in support of integrating CS concepts throughout the business curriculum. For instance, Stubbs and Cocklin indicate that a stand-alone CS course would allow students to explore basic principles and views, but sustainability needs to be integrated into the core business courses to prevent it from being viewed as a separate, disconnected issue. Carrithers and Peterson (2006) state that

> one potential danger of teaching standalone sustainability units is the educational disconnect that may arise between the free-market focus of MBA curricula and the social and environmental externalities associated with the operations of free-markets as they are currently constructed. (p. 373)

These works further specify that investigating how best to integrate CS into existing business courses is an area in need of further research.

A few studies have examined the integration of CS concepts into existing/traditional business courses. Albinsson, Perera, and Sautter (2011) proposed the use of online activities to increase undergraduate students' understanding of sustainability in business. They found that students who participate in these activities were able to "more successfully identify the relevance of sustainability and corporate social responsibility in the work place and in their personal lives" (p. 117). Borin and Metcalf (2010) discuss integrating sustainability into the marketing curriculum via learning activities that facilitate sustainable marketing practices, but do not provide results indicating the effectiveness of this approach.

Overall, there has been limited work as to how to effectively integrate CS concepts within the undergraduate business curriculum, which is one of the contributions of our work. We advocate integrating CS with the senior capstone strategy course due to the synergistic nature of these areas. Exploring the CS-focused strategic model allows students to develop a comprehensive understanding of the weaknesses inherent in the traditional shareholder model. We then conduct an exploratory study to provide a measure of the effectiveness of the proposed CS-strategy course, which is discussed in the Research Methods section.

Corporate Sustainability and Organizational Strategy: Integrated Course Design

In designing the integrated CS-strategy course, corporate sustainability was taken into account throughout the strategic decision-making process. From product design, operations, and supply-chain management all the way to human resources and employee motivation, this integrated course takes the view that business education must provide future managers with a more comprehensive view of strategic management and planning, one in which CS plays a crucial role. Multinational corporations like Unilever, Nike, SAS, Marks and Spencer, and Interface Carpeting, to name a few, have all embraced the idea of CS as a pivotal part of their strategic planning process. Even a casual reading of the sustainability reports on their respective websites demonstrates a commitment to CS.

The integrated CS-strategy course was discussion based and followed readings and case studies from the Werther and Chandler (2010) textbook *Strategic Corporate Social Responsibility*. Chapters from the text were supplemented with several articles, books, and videos (Appendix A). Quizzes ensured that students kept up with the large amount of reading, and two exams were held during the semester. Finally, students worked in small groups to complete a term project, which required a strategic analysis of a firm grappling with how to be more effective, efficient, sustainable, and profitable. A list of topics discussed within the course is provided (Appendix B).

The integrated CS-strategy course was focused on three objectives. The first was to develop a broad view of the role of business in society, especially the interdependent nature of their relationship. This is discussed first from a historical perspective, which included the evolution of the corporate form and factors that influenced it, as well as the moral purpose of a business. The fiduciary requirement—often misinterpreted as being only to generate profits—is discussed, and associated readings included Friedman (1970), Mulligan (1993), Grossman and Adams (1993), Handy (2003), Hawken (2007, 2008), and Hartmann (2010), among others. Corporate charters, fiduciary responsibility, and legitimacy are contrasted within the context of both the shareholder model and the stakeholder model, which provides a segue to CS. In the CS model, there is no tension between corporate behavior and its social/environmental impact. The corporation operates within a society that gives it the authority and legitimacy (through its charter) to provide goods and services.

The second was for students to understand the link between competitive advantage and CS—sustainable competitive advantage assumes the marriage of internal strengths/competencies with external opportunities. Students read Porter and Kramer (2006), Anderson (2011), McDonough and Braungart (2002), and Hawken (2010), where they are exposed to numerous examples of organizations developing socially anchored competencies to gain competitive advantage. Students also learned to distinguish socially anchored competencies from general, scattered, and haphazard philanthropic and environmental initiatives. At this point students are equipped with sufficient background and examples to critically examine Friedman's (1970) argument that the social responsibility of business is to increase its profits. Students come to realize that these arguments are no longer black and white but nuanced with shades of gray, as they begin to recognize that CS can yield competitive advantage, although significant investment and innovation may be required to develop socially anchored competencies. This topic then lays the groundwork for a discussion on the consequences of misalignment of core competencies and CS initiatives (O'Brien, 2001).

The third objective is for students to view CS as a vital risk management tool. For example, social and environmental concerns should be addressed within traditional strengths, weaknesses, opportunities, and threats (SWOT) analyses. Treating such concerns as irritating distractions might not only threaten the organization's short-term performance, but also prevent it from seizing opportunities over time (Davis, 2005). Furthermore, maximizing short-term shareholder value might translate into damages for their long-term interests. From a risk management perspective, a CS analysis should precede any new strategic initiative.

In conclusion, students leave this course with a greater appreciation of the depth and breadth of the concepts, issues, and controversies involved in strategic management than what a traditional strategy course offers. They have read critically, thought analytically, spoken articulately, written convincingly, and worked cooperatively in their search for a more realistic viewpoint of the challenges of managing a firm from a strategic vantage point. Traditional strategy courses typically fall short of giving full attention to the importance of noneconomic issues in developing a sustained, competitive advantage. For the most part, little emphasis is put on them outside of what tend to be segmented lectures and textbook chapters on corporate governance and/or business ethics, giving the impression that these topics are disconnected, or at least, tangential to the real variables of strategic management or planning (e.g., barriers to entry, product substitutes, new competition, etc.; Porter, 1979). The foundation for this approach relies too heavily on industrial organization economics (Barney & Ouchi, 1986; Williamson, 1975), which reduces the complexity of the marketplace in order for it to be "managed." It does so by ignoring the significant interdependent relationship between social/environmental factors and the internal and external processes endemic to the modern corporation.

RESEARCH METHODS, ANALYSIS, AND RESULTS

We conducted an observational study in an AACSB-accredited, public business school within the United States. In total, 606 students were sampled: 341 freshmen in the introductory, Business Enterprise course and 265 seniors in the capstone, Organizational Strategy course. Of the 265 seniors, 181 were in a traditionally taught section and 84 were in an integrated CS-strategy section. We were not able to randomly assign students between the two types of course sections; however, both sections had identical titles within the registration system, "Organizational Strategy," reducing the likelihood of self-selection bias.

Each student was administered a 25-item CS survey, which used a 7-point Likert scale to measure students' views concerning the following topics: the role of business in society, consequences of accounting for social and environmental issues, the importance of social and environmental issues, and the current prevailing state. The survey was designed such that on average, higher scores were indicative of an increased awareness/concern for social and environmental responsibility in corporate decision making and strategic planning. Item analysis on the survey indicated sufficiently high reliability (Cronbach's alpha = 0.86). Surveys were anonymous and administered by the course professor. This survey is located in Appendix D, along with the relative frequency distribution of responses for each item, which is located in Appendix E.

Our objectives in conducting this research study are further discussed in Analysis 1 and Analysis 2. Results for the each analysis are also presented, followed by discussion in the proceeding section.

Analysis 1: Examining the Effectiveness of the Traditional Business Curriculum in Influencing Students' Views Toward CS

The objective of our first analysis was to examine the extent to which views toward CS differ between seniors and freshmen in a traditional business curriculum. How much, on average, do the views of seniors who have completed the curriculum differ from those of freshmen, who have just entered the program and not had any formal business education?

We view a traditional curriculum as one that requires a stand-alone course in either business ethics or social responsibility, in addition to a series of required/core courses involving the functional business areas. An exemplary list of courses in what we consider to be a traditional undergraduate business curriculum is listed in Appendix C. This list is provided merely for illustrative purposes. We recognize that within a traditional curriculum many CS topics are covered at some level within the core courses, but these courses were not specifically designed to have a substantial CS component.

In our first analysis, we compared the CS-survey results of 341 freshman business majors in the introductory Business Enterprise course with 181 senior business majors in the traditionally taught capstone strategy course. Ideally, we would have surveyed the same cohort of students at two points in time, but this was a limitation of our study. Data were analyzed using an ordinary least squares (OLS) linear regression model. Two indicator variables were included in our analysis to estimate main effects for academic status (freshman indicated by 0 and senior indicated by 1) and for gender (male indicated by 0 and female indicated by 1), which was added as a control because previous studies have shown gender to have a significant impact on environmental and ethical orientations.

Results for Analysis 1 are located in Table 1. Estimated regression coefficients from the analysis are included along with standard errors, *T*-statistics, *p* values, and 95% confidence intervals for the regression coefficients. The effects for

TABLE 1
Ordinary least squares regression results for Analysis 1

	Estimated coefficient	Standard error	*T*-statistic	*p* Value	95% Confidence interval
Gender (0 = male, 1 = female)	0.152	0.054	2.807	0.005	(0.046, 0.259)
Academic status (0 = freshman, 1 = senior)	0.234	0.057	4.127	4.0E-05	(0.122, 0.345

both gender and academic status were found to be statistically significant ($p < .01$). Comparing the responses for freshmen versus seniors, we found that senior status increases average CS score by approximately 0.2 units, measured on a 7-point Likert scale. Note that whether the increase in CS score is specifically attributable to the business curriculum, cocurricular activities, and/or individual maturity cannot be determined from this study. Considering gender effects, males were found to have lower average CS scores than females by about 0.15 units.

Analysis 2 and Results: Effectiveness of the CS-Focused Strategy Course

The objective of our second analysis was to examine whether integrating CS within the senior capstone strategy course is an effective means for influencing students' views toward the legitimacy of social and environmental issues in corporate decision making and strategic planning. This is examined by comparing the views of students in two different section types of the senior capstone strategy course: traditional sections versus CS-focused sections. A limitation of the study is that all the CS-focused course sections were taught by the same professor. Our hope is that these results will influence other professors to adopt the CS-focused approach in the future. Collecting additional data from future sections with different professors would improve the reliability of our findings. We surveyed a total of 181 students in the traditional section and 84 students in the CS-focused section.

Data were analyzed using an ordinary least squares (OLS) linear regression model. Two indicator variables were included in our model to estimate main effects for course section (traditional indicated by 0 and CS-focused indicated by 1) and also for gender (male indicated by 0 and female indicated by 1). Gender was included again as a control as it was in the first analysis.

Results are located in Table 2. Estimated regression coefficients from our analysis are included, along with standard errors, T-statistics, p values, and 95% confidence intervals for the regression coefficients. Both the gender effect and the course section effect were found to be statistically significant ($p < .01$). Comparing responses for students in the traditional course sections versus the CS-focused sections, we found that the average CS score was approximately 0.6 units higher in the CS-focused sections, measured on a 7-point Likert scale. Considering gender effects, males were found to have lower average CS scores than females by 0.25 units.

DISCUSSION AND SUGGESTIONS FOR FUTURE WORK

The most pertinent argument for increasing business students' exposure to CS is that, relative to other majors, business majors have been shown to have lower concern for the environment, to be less likely to consider moral implications when making decisions, and to favor decreasing, rather than increasing, the amount of corporate resources diverted toward society. Benton (1994a) found that "business students were not less environmentally knowledgeable, but they did demonstrate less concern for the environment, less willingness to act in environmentally-friendly ways, and reported behavior that was less environmentally oriented" (p. 191). He also found that the correlation between business students' academic standing (freshman, sophomore, junior, senior) and their environmental attitudes is weak and sometimes negative. Environmental concern was also found to be lower on average for males than for females. Hodgkinson and Innes (2001) found that business students have lower environmental concern than students in other disciplines, with the exception of computer science majors, who scored the lowest overall.

Schmidt, Adams, and Foster (2009) report that undergraduate business majors score lower on tests of moral development than samples drawn from the American public at large; similarly, McNeel's (1994) results indicate that business majors are less likely to consider moral implications when making decisions. They are also more likely to attribute poverty to laziness or intellectual inferiority rather than to structural or societal factors such as job shortages, low wages, racial discrimination, and unequal educational opportunities (Seider et al., 2011). Regarding social responsibility, Arlow (1991) found that business majors were in favor of decreasing, rather than increasing, the amount of corporate resources diverted toward society.

Such discouraging results present a particularly strong challenge to management faculty in educating students about the complex environmental, social, and ethical issues related to CS. This is compounded by the difficulties educators face in attempting to further develop the ethical standards of business students, as there are mixed results regarding the efficacy of ethics education (Arlow, 1991; Seider et al., 2011; Waples

TABLE 2
Ordinary least squares regression results for Analysis 2

	Estimated coefficient	Standard error	T-statistic	p Value	95% Confidence interval
Gender (0 = male, 1 = female)	0.250	0.083	3.032	0.003	(0.088, 0.413)
Course section (0 = traditional, 1 = CS-focused)	0.596	0.088	6.764	8.8E-11	(0.423, 0.770)

et al., 2009). Consequently, once business schools decide to incorporate CS into their undergraduate curriculums, much consideration should be given as to how to do it effectively.

The results of our first analysis provide evidence that the traditional undergraduate business curriculum does influence student's views toward the legitimacy of social and environmental factors. However, the increase in CS scores between freshmen and seniors was only 0.2 units (on a 7-point Likert scale, $p < .01$), which indicates that the effectiveness of the traditional curriculum in influencing students' views regarding these issues is limited. The relatively small difference between freshmen and seniors suggests that, at the very least, the traditional undergraduate business curriculum needs to be enhanced to better illustrate the need for CS.

Our second analysis compared the average CS survey scores for seniors upon completion of a traditionally taught strategy course to those in a CS-focused strategy course. Scores from students in the CS-focused course were 0.6 units higher on average (on a 7-point Likert scale, $p < .01$). This increase is three times the average increase between freshmen and seniors in the traditional business curriculum. We view this increase as being indicative of two things. First, it emphasizes how the traditional strategy course falls short of giving due attention to CS. Second, the CS-focused strategy course appears to be a promising means for more effectively influencing student's views about the legitimacy of social and environmental issues in corporate decision making and strategic planning. We encourage future work toward this means, providing both integration plans for CS, along with measures of effectiveness.

An alternative explanation for these results may be a demand effect in that students in the CS-focused strategy course know the "right" answer. This is a limitation of using the CS survey as a measure of course effectiveness. However, also consider that upon completion of the traditionally taught strategy, we would hope that students would also know the "right" answer. Having students respond to a case study could provide more compelling evidence that students who completed the CS-focused course fully considered social and environmental factors in their responses. Nevertheless, hypothetical scenarios are still a poor proxy for managerial decision making in practice, and such a study would still have limitations. This is a consideration for future work, as we expand the scope of our study to further validate our results. We also plan to extend our sample to include majors from other disciplines across campus. A cross-disciplinary sample will enable a contextual assessment of the CS viewpoints of business students with those of students in the arts and sciences.

Brunton (2006) believes that business schools must rethink their curriculums to fully integrate education for sustainable development and that waiting until the final-year strategic capstone course is "too little, too late" (p. 41). We support this belief, as we are not advocating that the only place CS topics should be integrated into the undergraduate curriculum is within the capstone strategy course. Rather, we believe that this is one of several potential areas in which CS topics could be effectively integrated, and recommend future exploratory research of this means. Another consideration for future work is better educating business faculty about CS. Benton's (1994b, p. 12) study indicated that compared to faculty in the arts and sciences, business faculty were less knowledgeable about environmental issues ($p < .05$) and demonstrated less ecologically oriented attitudes ($p < .01$). Such results should be troubling for business education as a whole.

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APPENDIX A: INTEGRATED COURSE READINGS AND VIDEOS

Course Readings

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Course Videos

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APPENDIX B: INTEGRATED COURSE CONCEPTS

Forces Driving CS
Pillars of Implementing CS
Faces of Mount Sustainability (from Anderson, 2011)
Core Competencies
Cradle to Cradle
CS Deficit/Window of Opportunity
CS Filter
CS Ombudsmen
Cyclical Capitalism
Developing Sustainability Metrics
E-Waste
Eco-Efficiency Versus Eco-Effectiveness
Prioritize Stakeholders
Extended Producer Responsibility (EPR)
Foreign Corrupt Practices Act (FCPA)
Global Reporting Initiative (GRI)
Green Design
Green Washing
Greening the Supply Chain
Independent, Third-Party Auditing
Integrated Reporting (Financial and Sustainability Metrics)
Interdependency of Business and Society
Internalizing/Externalizing Costs
Life Cycle Analysis
Nongovernmental Organizations and Relationship to Firms
Precautionary Principle
Prioritizing Stakeholders
Purpose of Business (improve society and make a profit)
Revolving Door (between industry and government)
Tying Executive Compensation to Sustainability Goals
Vision, Mission, Strategy, Tactics
Waste = Food

APPENDIX C: ILLUSTRATIVE EXAMPLE OF A "TRADITIONAL" UNDERGRADUATE BUSINESS CURRICULUM

This list of courses is provided to serve illustrative purposes as to what we consider the core courses in a traditional undergraduate business curriculum. Such a curriculum may include a stand-alone course in ethics or social responsibility, along with required courses in the functional areas of business. We recognize that it is likely the case that CS topics are covered at some level within the core business courses, but we these courses were not specifically designed to have a substantial CS component.

Introduction to Business Enterprise (3 hours) .Theory and practice of private enterprise. Includes purposes, structures, functional areas, and related institutions, as well as individual career planning and library research skill development.

Legal, Ethical and Social Environment of Business (3 hours). Emphasis on business ethics and corporate social responsibilities. Areas of concentration include contracts, torts, agency and business associations, government regulation of business, securities, labor, and employment law.

Principles of Economics (4 hours). Supply and demand in product and resource markets, international trade, determination of gross domestic product (GDP), employment, inflation, and economic growth.

Financial Accounting (3 hours). Introduction to financial accounting. Examines the nature of accounting, basic accounting concepts, financial statements, accrual basis of accounting, the accounting cycle, monetary assets, inventories, fixed assets, current and noncurrent liabilities, and owners' equity.

Managerial Accounting (3 hours). Introduction to managerial accounting. Examines the nature of cost–volume–profit analysis and product costing; investigates budgets and standard costs in planning, control, and performance measurements; and employs relevant costs and present value techniques in decision making.

Information Systems in Organizations (3 hours). Management-oriented course covering concepts of business information systems and integration of business information systems with functional areas of organizations.

Business Finance (3 hours). Principles and problems of planning and managing assets of business. Formulation, acquisition, and utilization of funds and capital structure examined.

Introduction to Marketing Management (3 hours). A managerial approach to the study of such key decision areas as advertising, distribution, pricing, and product development, as well as other concepts and activities that facilitate exchange and build relationships between buyers and sellers in the environments of business and nonbusiness organizations.

Business Organization and Management (3 hours). Organization theories and the role of managers as leaders. Planning and control systems, decision making, and human considerations.

Operations Management (3 hours), Issues related to managing the processes by which organizations transform resources into quality goods and services. Topics include operations strategy, project management, quality management, and inventory management.

Organizational Strategy—Senior Capstone Course (3 hours). Integration of the decision-making processes involved in each of the major functional areas of business.

APPENDIX D: CORPORATE SUSTAINABILITY SURVEY INSTRUMENT

Please indicate to what extent you agree or disagree with each of the following statements on the following scale:

1. I strongly disagree	4. Neutral	5. I agree to some extent
2. I disagree for the most part		6. I agree for the most part
3. I disagree to some extent		7. I strongly agree

1. Working to improve society should be considered by businesses as one of their responsibilities.
2. Socially and environmentally responsible business decisions can be profitable.
3. Managers who are not concerned with the environmental and social impacts of their decisions are acting unethically.
4. U.S. laws are doing enough to enforce socially and environmentally responsible business practices.
5. The objective of business is to make a profit and the inclusion of any social and environmental issues beyond meeting legal requirements should be avoided.
6. How corporate actions are affecting the environment is increasingly important to society.
7. Taking social and environmental issues into account provides a competitive advantage to organizations.
8. A company's bottom line will be negatively affected if it fails to address the concerns of all its stakeholders.
9. In my opinion, most businesses are already working to improve society.
10. Most businesses are acting in a socially and environmentally responsible manner.
11. All other conditions equal, I prefer to work for an environmentally and socially responsible company rather than for one that is not.
12. Salary and bonuses are more important to me than working for an environmentally and socially responsible company.
13. Irresponsible business practices negatively affect customers' purchasing decisions.
14. Taking social and environmental issues into account can serve as a risk avoidance strategy to organizations.
15. A good business education should include social and environmental issues (in addition to such important business content as finance, accounting, and marketing).
16. A corporation's sustained prosperity can only be achieved by a business if it addresses social and environmental issues as well as profitability.
17. The resolution of social and environmental concerns is best left to/handled by institutions other than business.
18. Most companies are trying to appear more socially and environmentally responsible than they actually are.
19. Social and environmental concerns have been emphasized in my business classes at ISU.
20. Environmental and social concerns are the responsibility of the government and not of businesses.
21. The primary responsibility of businesses is to make money, rather than worrying about improving society.
22. Business will do a good job of regulating their own decisions and actions if the government just leaves them alone.
23. Company's resources belong to shareholders and managers have no right to spend them on social and environmental causes.
24. The only responsibility of business managers is to maximize the interest of company shareholders.
25. Reports of business social and environmental transgressions are mostly "hype" created by the media.

APPENDIX E: RELATIVE FREQUENCY DISTRIBUTION FOR CS SURVEY RESULTS

1. I strongly disagree
2. I disagree for the most part
3. I disagree to some extent
4. Neutral
5. I agree to some extent
6. I agree for the most part
7. I strongly agree

Total sample size was 606.
A copy of the survey items is provided in Appendix D.

	7-Point Likert scale: percent of responses in each category								
Survey item number	1	2	3	4	5	6	7	Mean	Standard deviation
1	0.01	0.01	0.05	0.10	0.23	0.34	0.26	5.60	1.25
2	0.00	0.01	0.03	0.07	0.22	0.36	0.30	5.79	1.13
3	0.01	0.03	0.11	0.11	0.24	0.26	0.23	5.25	1.46
4	0.03	0.08	0.20	0.20	0.25	0.16	0.07	4.33	1.51
5	0.01	0.04	0.10	0.19	0.22	0.23	0.20	5.05	1.46
6	0.01	0.01	0.03	0.12	0.25	0.38	0.20	5.55	1.14
7	0.00	0.02	0.05	0.15	0.29	0.33	0.16	5.35	1.18
8	0.01	0.03	0.07	0.18	0.25	0.29	0.18	5.18	1.35
9	0.02	0.07	0.21	0.23	0.28	0.15	0.04	4.31	1.33
10	0.01	0.08	0.23	0.23	0.26	0.14	0.04	4.23	1.34
11	0.01	0.02	0.04	0.15	0.17	0.22	0.40	5.71	1.38
12	0.06	0.12	0.22	0.23	0.18	0.11	0.08	3.97	1.60
13	0.01	0.04	0.09	0.14	0.30	0.27	0.16	5.11	1.35
14	0.00	0.02	0.06	0.27	0.31	0.22	0.11	4.95	1.18
15	0.01	0.02	0.05	0.11	0.28	0.30	0.24	5.46	1.29
16	0.01	0.04	0.09	0.19	0.27	0.27	0.12	4.93	1.36
17	0.03	0.10	0.16	0.23	0.25	0.15	0.07	4.26	1.49
18	0.19	0.32	0.27	0.16	0.04	0.02	0.01	2.58	1.19
19	0.06	0.11	0.12	0.31	0.18	0.12	0.09	4.13	1.57
20	0.04	0.05	0.14	0.15	0.26	0.21	0.17	4.78	1.59
21	0.05	0.08	0.17	0.13	0.19	0.22	0.16	4.59	1.75
22	0.01	0.07	0.07	0.14	0.24	0.21	0.26	5.18	1.55
23	0.02	0.05	0.08	0.22	0.26	0.22	0.14	4.87	1.42
24	0.03	0.09	0.13	0.18	0.25	0.18	0.13	4.58	1.58
25	0.02	0.08	0.18	0.32	0.19	0.13	0.07	4.25	1.37